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The Architecture
of Learning
and Knowledge

Tenley / Friendship Library



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Sidwell's Serene Quaker Meeting Hall
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H.D. Woodson Senior High School,
by cox graae + spack architects.

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25

ARCHITECTUREDC

Vol. 15, No. 1

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421 7th Street, NW
Washington, DC 20004
phone: 202.347.9403 fax: 202.347.9408
www.aiadc.com

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Contents

It's Academic
Spring 2013

ARCHITECTUREDC



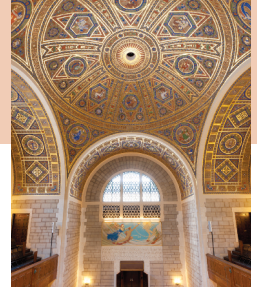
13



22



34



40

WELCOME

- 5 Great Design in the Public Realm
by Mary Fitch, AICP, Hon. AIA

DISTRICT ARCHITECTURE CENTER

- 7 Learning Happens Everywhere
by Mary Fitch, AICP, Hon. AIA

■ THE ARCHITECTURE OF LEARNING AND KNOWLEDGE

- 12 Arsenals of Knowledge:
DC Reinvents the Branch Library
by G. Martin Moeller, Jr., Assoc. AIA

- 22 Two Cool Schools:
Up-to-Date Designs for Public Education
by G. Martin Moeller, Jr., Assoc. AIA

- 32 Silence and Reflection in a Serene Light:
KieranTimberlake Designs a New Meeting
House/Arts Center for Sidwell
Friends School
by Ronald O'Rourke

- 40 A Temple of Science Welcomes Its Public
by Denise Liebowitz

ON THE COVER: Tenley-Friendship Neighborhood Library, by The Freelon Group
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GREAT DESIGN IN THE PUBLIC REALM

David Hamilton



This issue of *ARCHITECTUREDC* spotlights new architecture for learning. Inside, you'll find articles about well-designed school buildings, libraries, and other learning-related facilities. I think you'll enjoy reading about all these projects, but I want to spend a moment focusing on DC's widely acclaimed new public library branches, several of which our editor, Martin Moeller, writes about beginning on page 12.

A decade ago, DC's public libraries were in poor condition. Aged buildings were falling apart and lagging technologically in terms of the services they could offer to local residents. Rather than give into despair, DC's chief librarian, Ginnie Cooper, decided to seize upon the situation as an opportunity to transform the city's branch libraries and thereby help improve their surrounding neighborhoods. She set aside preliminary plans for bland and uninspired replacement structures, and instead sought out innovative architects who could design new buildings and renovations that would be aesthetically uplifting and technologically up to date while also being affordable.



Welcome!

Adjaye Associates, Freelon Group, Davis Brody Bond, Core Architects, Bell Architects, and Wiencek + Associates are some of the firms she enlisted in this effort. The collaboration between these architects and their energetic client has created beautiful and functional buildings that are not only worthy of any architectural publication, but catalysts for community activity.

Andrew Carnegie, whose philanthropy funded public library buildings across the country—including the 1903 Carnegie Library at Mount Vernon Square—said, "There is not such a cradle of democracy upon the earth as the Free Public Library, this republic of letters, where neither rank, office, nor wealth receives the slightest consideration."

Ginnie Cooper's leadership in renovating Washington's branch libraries is in keeping with that ideal. In view of her success in bringing first-rate architecture into DC's branch library renovation effort, AIA | DC was very pleased to nominate Ginnie for a national AIA award for public design, the Thomas Jefferson Award, which she'll receive in June at AIA's annual national convention in Denver.

The branch libraries and the other projects surveyed in this issue are yet another reminder of one of our central themes—that good design is not a luxury, but rather a high-payoff investment that strengthens neighborhoods and cities. Please enjoy this issue, and as always, I welcome your comments.

Mary Fitch, AICP, Hon. AIA
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mfitch@aiadc.com

Contributors

Denise Liebowitz ("A Temple of Science Welcomes Its Public"), formerly with the National Capital Planning Commission, is a frequent contributor to *ARCHITECTUREDC*.

G. Martin Moeller, Jr., Assoc. AIA ("Arsenals of Knowledge" and "Two Cool Schools") is an independent curator and writer, as well as senior curator at the **National Building Museum**. He is the editor of *ARCHITECTUREDC*.

Ronald O'Rourke ("Silence and Reflection in a Serene Light") is a regular contributor to *ARCHITECTUREDC*. His father, Jack O'Rourke, was an architect in San Francisco for more than four decades.

Correction

Based on erroneous information submitted to *ARCHITECTUREDC*, the article in the Winter 2012 issue about recent additions to the Myriad Botanical Gardens in Oklahoma City incorrectly credited I.M. Pei for the design of the original Crystal Bridge Tropical Conservatory. That building, completed in the early 1960s, was actually designed by the firm of Conklin & Rossant. Pei's firm was responsible for an earlier master plan for downtown Oklahoma City, which included a proposal for a botanical garden, but he did not design the structures ultimately built there.

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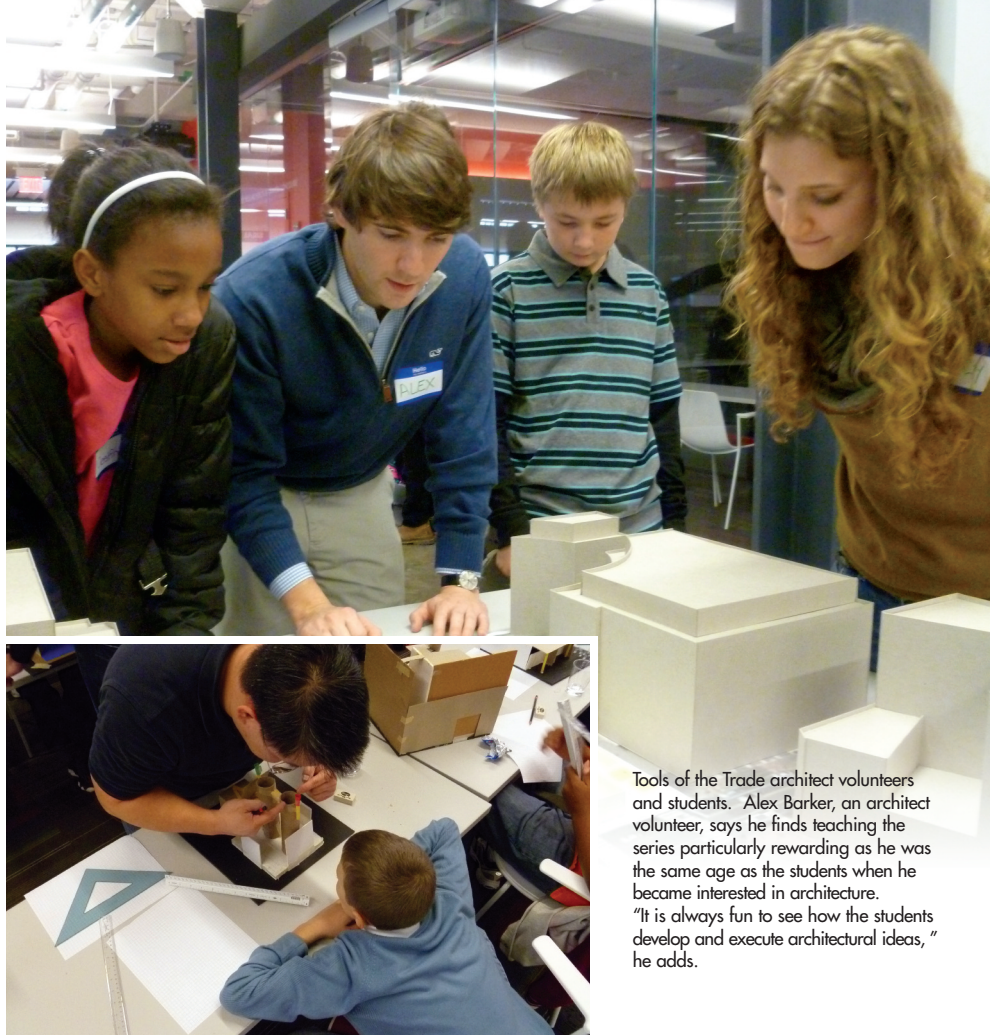
Washington Unbuilt:
Theoretical projects from
our design competition



In keeping with this issue's focus on designs for learning, it's worth noting that our own beautifully designed facility—the District Architecture Center—offers many educational opportunities to both professionals and the public.

One of our most popular programs is "Tools of the Trade," our four-part program for 10-14-year-olds. This program is an expansion of the Washington Architectural Foundation's well-regarded Architecture in the Schools programs that have been running in DC and Northern Virginia schools for more than twenty years.

Tools of the Trade is the perfect program for any young person interested in exploring the world of architecture. One Saturday a month, students meet with architect volunteers to study site concepts, scale drawings and models, and structural analysis. "I really enjoy watching the children learn," says Lam Vuong, AIA, leader of the program. "We work with such abstract concepts; it's really fun to see the kids understand them. They are so energetic, and it's fun to work with them and then take that energy back to my practice."



Architect Lam Vuong, AIA, works with student Christopher Holstrum on a new structure.


Tools of the Trade architect volunteers and students. Alex Barker, an architect volunteer, says he finds teaching the series particularly rewarding as he was the same age as the students when he became interested in architecture. "It is always fun to see how the students develop and execute architectural ideas," he adds.

Learning Happens Everywhere

by Mary Fitch

Dean Phillips, parent of Piper (11) and Laine (9), agrees. "My girls are really jazzed about these programs." He reports that his daughters approach the classes in different ways: "Piper likes design and Laine likes the mechanics of it all." For both girls, though, "working directly with the architects really makes a difference."

In addition to Tools of the Trade, other Saturday programs have focused on set design, museum design, and monument design, where half of the program was conducted in French, thanks to our partners in the Alliance Française. To see a complete listing of programs, please log onto or calendar at www.aiadac.com.

Tools of the Trade is supported by the Washington Architectural Foundation, the Chapter's philanthropic foundation whose mission is "Architects Serving the Community." The Foundation depends on donations for about two-thirds of its budget. You can help further expand these programs through a gift to the Foundation at www.wafonline.org or a membership in DAC (www.aiadac.com). 



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A close-up photograph of a wooden chair leg, showing the grain of the wood and a polished brass ball foot. The background is blurred, showing other parts of the chair.

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Main entrance of the Anacostia Neighborhood Library.

Photo © Mark Herboth Photography

Arsenals of Knowledge:

DC Reinvents the Branch Library

by G. Martin Moeller, Jr., Assoc. AIA

The World Wide Web. Google. Amazon. Online journalism. Each of these developments was heralded by some people as a harbinger of a better, more stimulating future, and lamented by others as a contributor to the inexorable demise of an institution that was once a cornerstone of American intellectual life—the public library.

Yet the civic importance of public libraries has, if anything, only grown in recent years. By embracing new technologies and offering innovative programming while remaining true to their educational mission, many libraries have succeeded in reinventing themselves and now enjoy unprecedented popularity. In several celebrated cases, such as the Seattle Central Library, designed by Rem Koolhaas and Joshua Prince-Ramus and opened in 2004, cutting-edge architecture has played an essential role in that success, both by effectively accommodating changing needs and by projecting an image of progress and excitement.

In 2006, the DC Public Library (DCPL) was preparing to embark on its own initiative to update or replace more than a dozen obsolete branch facilities across the city. A few of these branches occupied solid, attractive buildings

that suffered from a lack of maintenance, but others were in utterly dismal structures built during the 1960s and '70s, when the quality of public architecture in America was approaching its nadir. Faced with such a daunting scope of work, DCPL's trustees could have opted for the easy route, authorizing cheap, generic renovations or replacements of existing facilities, but they decided to aim higher. DCPL set a goal of bringing world-class architecture to neighborhoods throughout Washington and, in the process, helping to reinvent the very idea of the branch library for the 21st century.

Project: Anacostia Neighborhood Library, Washington, DC

Architects: **The Freelon Group** in association with **R. McGhee & Associates**

Landscape: **Lappas & Havener**

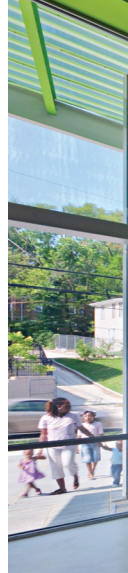
Civil: **Delon Hampton & Associates**

Structural: **Stewart** (formerly Stewart Engineering)

MEP Engineering: **Setty & Associates, Ltd.**

Daylighting and Lighting Design: **Horton Lees Brogden Lighting Design**

Contractors: **Forrester Construction**





Children's reading area, located just inside the main entrance to the Anacostia Library.

Photo © Mark Herboth Photography



Main reading room of the Anacostia Library.

Photo © Mark Herboth Photography

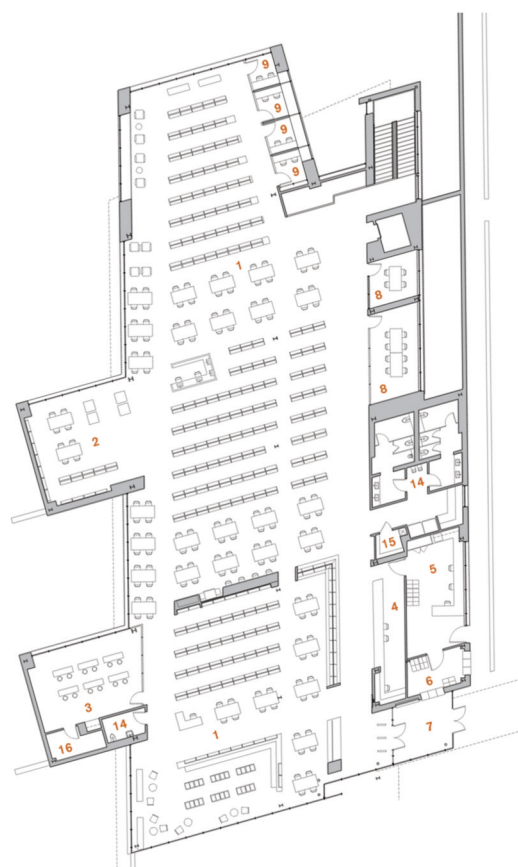
Seven years later, the DCPL Library Building Program is nearly complete, having yielded nine wholly new branches (a few of which are part of larger community centers) and four renovations of historic buildings. Two additional new buildings and one renovation are still in the works, but it is already clear that the initiative is a stunning success. At least ten of these projects have garnered significant awards for architecture or preservation. Several of them have received global attention, both in professional journals and the general press. Most important, these new or renovated branches are consistently attracting and engaging growing numbers of enthusiastic patrons.

This article focuses on four projects—one pair designed by one architectural team and another pair by a different team. Although the programs for these libraries were virtually identical, the four buildings are aesthetically and functionally distinct.

Southeast by Northwest

The Freelon Group, based in North Carolina, worked in association with the DC firm of **R. McGhee & Associates** to design two libraries in opposite quadrants of the city: the Anacostia Neighborhood Library on Good Hope Road in Southeast, and the Tenley-Friendship Neighborhood Library on Wisconsin Avenue in Northwest.

The Anacostia project, which earned a Merit Award in Architecture from AIA | DC in 2012, was one of the first of the new branches to open (in April 2010). Its immediate vicinity, while not very densely developed, has one of the largest concentrations of children in the city. Area residents had gone without a convenient



Main Level

Main and lower level plans of the Anacostia Library.



Lower Level

1. reading room
2. young adult
3. children's program
4. circulation desk
5. workroom
6. book return
7. entry
8. conference room
9. study
10. office
11. staff lounge
12. multipurpose
13. prefunction
14. restroom
15. building services
16. storage

Courtesy of The Freelon Group



Computer stations at the Tenley-Friendship Library.

Photo © Mark Herboth Photography



Atrium of the Tenley-Friendship Library, with the main reading room to the right.

Photo © Mark Herboth Photography

Project: Tenley-Friendship Neighborhood Library, Washington, DC

Architects: **The Freelon Group** in association with **R. McGhee & Associates**

Structural Engineers: **Stewart** (formerly Stewart Engineering)

Civil Engineers: **Delon Hampton & Associates**

MEP Engineers: **Setty and Associates**

Landscape Architects: **Lappas + Havener**

Lighting Designers: **Horton Lees Brogden**

Contractor: **Forrester Construction**

library for years, and were eager for a facility that would not only fulfill traditional book-lending and reference functions, but also beckon young people to discover the value of lifelong learning.

The new library is modestly scaled so as not to overwhelm its low-rise residential and commercial neighbors. It has only one story—albeit a tall one—facing the primary street, plus an exposed basement at the rear, where the land slopes downward. In plan, the library is a narrow bar that angles away sharply from the side street to the west, thus diminishing the building's apparent bulk and preserving a substantial wedge of green space to that side.

Although deferential in scale, the library is distinguished by several key architectural moves. On the east side, a narrow, luminous tower draws attention to the main entrance while providing a counterpoint to the building's predominant horizontality. The library's signature motif, however, is a bright green roof, which runs the length of the building, folds over the upper portions of the side walls, and projects beyond the front façade. "We saw the big, single roof as a welcoming gesture,"

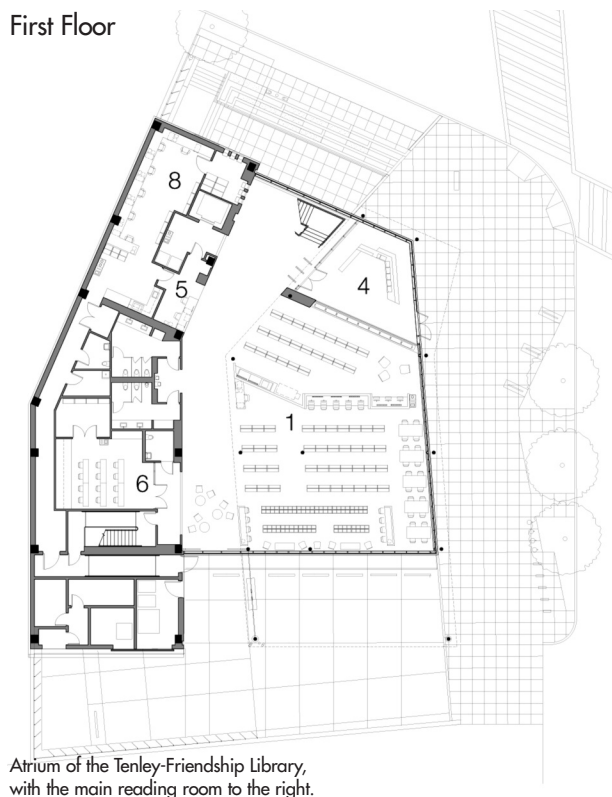


Tenley-Friendship Library as seen from the corner of Wisconsin Avenue and Albermarle Street.

Photo © Mark Herboth Photography

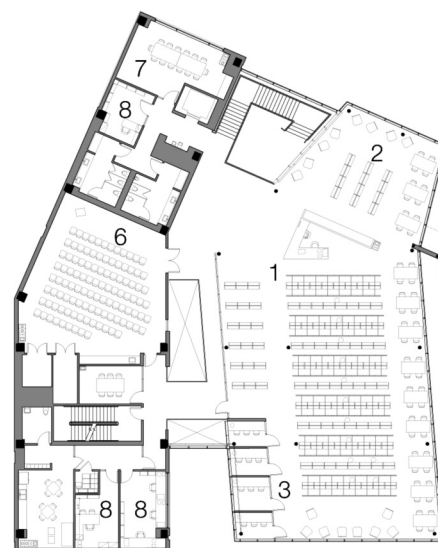


First Floor



Atrium of the Tenley-Friendship Library, with the main reading room to the right.

Second Floor



- | | |
|-----------------|---------------------|
| 1. reading room | 5. circulation desk |
| 2. young adult | 6. multipurpose |
| 3. study | 7. conference |
| 4. entry | 8. workroom |

Courtesy of The Freelon Group

explained **Zena Howard, AIA, LEED AP**, a principal at the Freelon Group. “At the front, it creates a gathering space—sort of like a porch. On the sides, the perforated metal filters sunlight, which helps soften [the appearance of] the building.”

The impact of the sweeping roof is more evident inside. The main reading room is perhaps the most elegant of any in the new library branches—a bright, open space punctuated by a row of trim columns and a series of linear skylights. “The single roof gives you the sense that the library is really one big room,” noted Howard. “Different uses are delineated in more subtle ways, like lighting and furniture.”

The Anacostia library is unique in at least one respect. “For the other libraries, the communities usually said, ‘We really don’t want our kids on display,’ so the children’s reading rooms are toward the interior or on an upper level,” explained Howard. Not so at Anacostia. “There,” said Howard, “the children’s area is front and center, facing the street. This community’s idea was to celebrate all the kids they have.”

While designing the Anacostia building, the Freelon and McGhee team was also at work on the Tenley-Friendship Library, the context of which was dramatically different. The Tenley-Friendship branch, which won a 2012 AIA | DC Award for Excellence in Architecture, stands on a relatively tight site and faces a major commercial thoroughfare in one of the city’s most affluent areas. It is a highly valuable piece of real estate.

“A lot of people did not think that a library was the ‘highest and best use’ for the site,” explained Zena Howard. “There were lots of proposals to do something

other than a library—mostly residential mixed-use. In the end, the community fought for their library right there. We had to redesign to accommodate these changes—and even to allow for the possibility of a future, larger development above our building.”

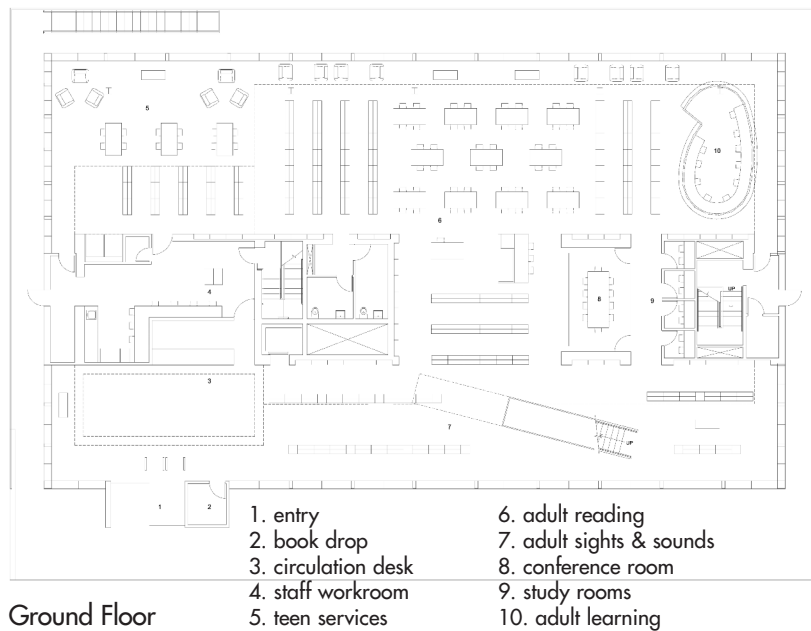
Fortunately, the library as built appears well tailored to its context. The architects sensibly decided to place service and support functions along the western edge of the site, where the building hugs the property line. That freed up the eastern edge—facing the pedestrian and vehicular traffic along busy Wisconsin Avenue—for the most important public areas, with a circulation spine running between the public and private zones.

As the architects continued to develop the plan, they experienced an epiphany. “We were discussing the issue of sustainability,” said Howard. “We wanted to let lots of daylight in, but without glare and heat gain, so we were thinking about using fins to filter the light. We had already placed the support spaces to the west, leaving more open spaces to the east. Then the metaphor came to us. The building could be like a book, with its solid ‘spine’ to the west and with ‘leaves’—the vertical sunscreens—unfolding to the east.”

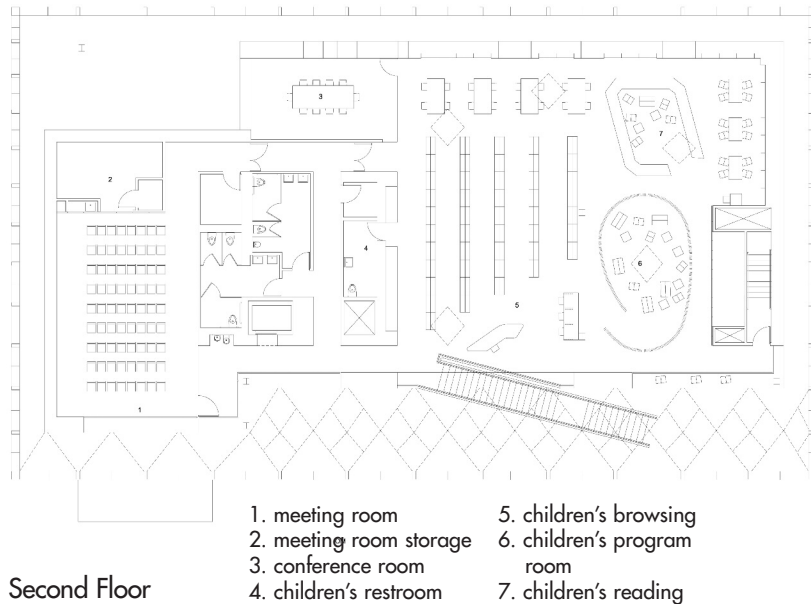
Digital simulations determined the placement and size of the vertical fins, which were initially designed as laminated glass panels but ended up being made of anodized aluminum. In cross-section, the fins are slightly curved, like an airplane wing, lending them a sculptural quality. Their coppery color enhances the apparent depth of the façades and casts a warm glow in the interior.

Summarizing the role of community input in the Tenley-Friendship Library, Howard said, “It was surprising





Ground Floor



Second Floor

Project: Francis A. Gregory Neighborhood Library, Washington, DC

Architects: **Wienczek + Associates**
Architects + Planners
(architects of record) /
Adjaye Associates (design architects)

Structural Engineers: **ReStl Designers, Inc.**
MEP Engineers: **Setty & Associates**
Civil Engineers: **Greenhorne & O'Mara**
Contractor: **HESS Construction**

to me how, when we started, everyone in the community seemed to know exactly what they wanted. Then, as we went through the process, people realized that what they wanted was not necessarily what they had imagined. The process led to better result for all parties concerned."

Patterns and Forms

Two of the newest branches, both near the southeastern border of the District, are the Francis A. Gregory Neighborhood Library and the William O. Lockridge/ Bellevue Neighborhood Library. Both were designed by a team consisting of **Adjaye Associates**, based in London and New York, and the local firm of **Wienczek + Associates Architects + Planners**.



Interior of the Francis Gregory Library.

Photo © Edmund Summer
Photography



Exterior of the Francis
Gregory Library.

Photo © Edmund Summer
Photography



The Francis Gregory Library, on Alabama Avenue, SE, is a riddle, wrapped in a mystery, inside an enigmatic, diamond-patterned box. In plan, the building is a basic rectangle sited at the edge of a verdant park. The principal façade addresses the street squarely. Inside, most of the furnishings are arranged in simple, orthogonal compositions, accented by a small number of geometrically distinct elements, such as an angled staircase and a couple of freeform, curvilinear partitions. From a purely functional perspective, it could hardly be more straightforward.

Yet to observe this building, wander through it, and use its resources is an extraordinary experience. This is primarily because of its lively and quirky curtain wall, the pattern of which resembles the distinctive costume of a Harlequin character in Renaissance Italian theater. The glass panes alternate between transparent and reflective panels. Under certain lighting conditions, passersby may simultaneously see glimpses of the interior and reflections of the surrounding trees, creating a hybrid image reminiscent of a double exposure on photographic film. The pattern of the diagonal mullions—which at first appears to be geometrically regular—is in fact skewed, with the glass panels growing larger toward the top of the façades and toward the front of the building. The structure's crown is a thin, horizontal canopy supported by exposed beams that echo the diamond pattern of the curtain wall.

The inspiration for this visual extravaganza was the library's setting. "This is a pavilion in a park," noted **Hal Zaslow, AIA, LEED AP**, studio director for Wiencek + Associates. "The design seems to be all about geometry, but it's actually organic. I think of those diamond panes like the veins in a leaf."

"The design of the curtain wall represents a growth pattern," added **Russell Crader, RA, LEED AP BD+C**, project architect with Adjaye Associates, explaining the splayed diagonals on the façades. "The building expresses change. It's a dynamic building surrounded by nature, which is always changing."

The interior of the building is equally unusual, not only because of the startling two-dimensional pattern of the perimeter walls, but also because those walls are unexpectedly deep. Sheathed in wood, the interconnected boxes at the back of the reflective glass panels appear to form a single, gigantic piece of built-in furniture. Within that wooden cage float various elements, some sculptural, some colorful.

"It's sort of like a big tree house," said Zaslow. "You can sit and read a book, and look up and realize that you're in the woods."

The Lockridge/Bellevue Library, which received an AIA | DC Merit Award in Architecture in 2012, is on Atlantic Street, SW, in a low-rise residential neighborhood not far from the Anacostia Freeway. Although this library has almost exactly the same square footage as the Francis Gregory branch, it is a much more monumental building. That is partly because it is a story taller—a logical result of the relatively compact dimensions and dramatic slope of the site, which rises about 40 feet toward the rear property line.

The impression of monumentality also derives, however, from the building's distinctive composition of irregular polygonal forms. The large, central block is an asymmetrical hexagon containing the general reading areas, stacks, circulation desk, and support functions. A smaller hexagonal volume, projecting from the second floor toward the east, serves as the Children's Pavilion. The two volumes projecting from the third floor, toward the north, are the hexagonal Teen Pavilion and the pentagonal Adult Pavilion, which comes to a sharp point toward the front. The third-floor projections, perched on massive concrete columns, also create a portico at ground level outside the main entrance.

As with the Francis Gregory Library, the exterior design of the Lockridge/Bellevue project owes a debt to its context. "We looked around the neighborhood," explained Russell Crader, "and noticed how many of the houses had porches, many of them clearly later additions. Then we noticed other additions—garages,



Lockridge/Bellevue Library, with the main entrance visible at center.

Photo © Eric Taylor,
www.EricTaylorPhoto.com



Interior of the Lockridge/Bellevue Library.

Photo © Edmund Summer Photography

Project: William O. Lockridge/Bellevue Library, Washington, DC

Architects: **Wienczek + Associates**

Architects + Planners

(architects of record) /

Adjaye Associates (design architects)

Structural Engineers: **Restl Designers, Inc.**

Civil Engineers: **Greenhorne & O'Mara**

Contractors: **Coakley & Williams**

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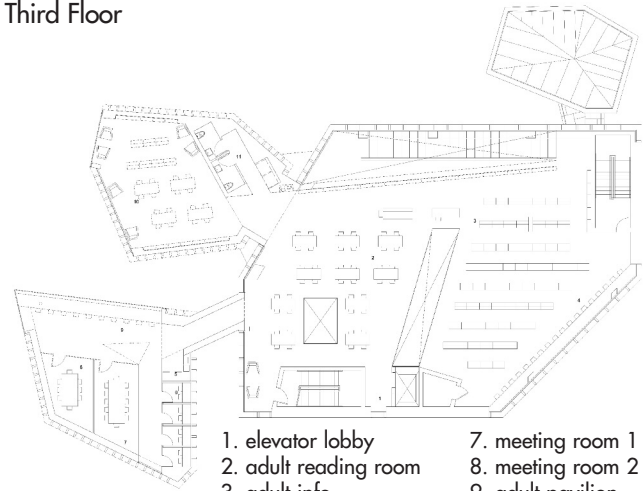
etc.—and we realized that there was an interesting vernacular based on many additions over time. The design of the library, with those projecting forms, alludes to that vernacular.”

The interior of the Lockridge/Bellevue branch is richly layered and enlivened by planes of eye-popping color. A glass-enclosed shaft of space brings light to lower levels, while rakish staircases encourage movement between floors. Some areas are defined by lustrous materials that one might expect to find in a sleek dance club rather than in a public library.

In preliminary designs for the project, the architects envisioned carrying more of that vibrant palette to the outside. The projecting volumes were to be clad in a different material from the main block, finished in various colors, and topped by pitched roofs of varied shapes. In early community meetings, however, area residents objected to those aspects of the project, which they considered visually cacophonous. The architects redesigned the pavilions with a consistent pattern of vertical slats and eliminated the jumble of pitched roofs. As built, the exterior design allows a purer reading of the building’s curiously irregular geometry and simultaneously elevates the project to a more dignified level.

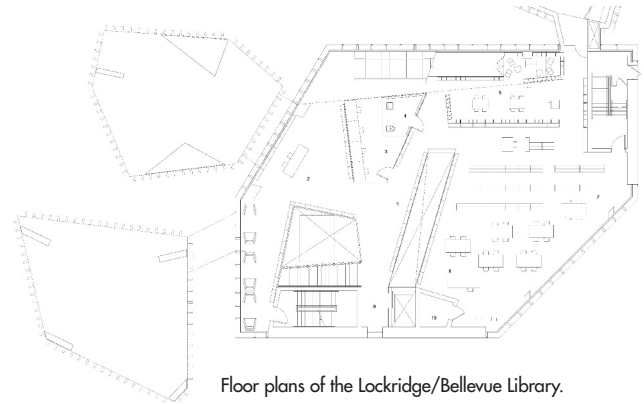
DCPL’s Library Building Program represents a milestone in Washington’s history. It has resulted in a collection of landmark buildings that are not on the Mall or in the commercial core, but in typical DC neighborhoods. Collectively, these new libraries reflect Washington’s growing architectural ambitions and suggest that other exciting developments are soon to come. 🏛️

Third Floor



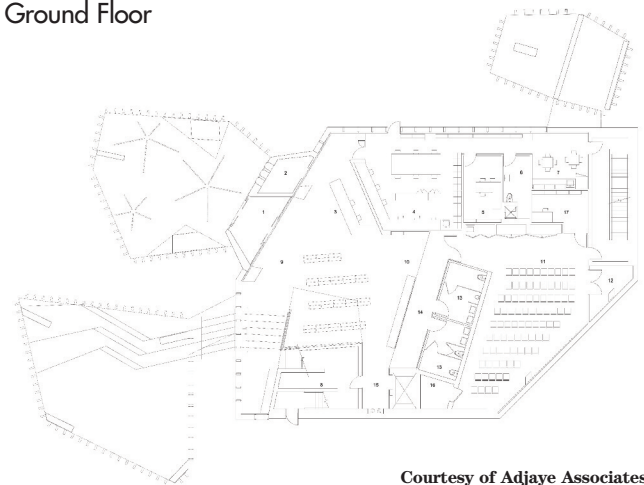
- | | |
|-------------------------|-------------------|
| 1. elevator lobby | 7. meeting room 1 |
| 2. adult reading room | 8. meeting room 2 |
| 3. adult info | 9. adult pavilion |
| 4. adult reading room 2 | 10. teen services |
| 5. printer room | 11. rest rooms |
| 6. study rooms | |

Second Floor



Floor plans of the Lockridge/Bellevue Library.

Ground Floor



Courtesy of Adjaye Associates

Several libraries completed under the DCPL program have been featured in previous issues of **ARCHITECTUREDC**. The Watha T. Daniel/Shaw Neighborhood Library, by **Davis Brody Bond Aedas**, won a 2010 AIA | DC Chapter Award and was profiled in the Winter 2010 issue of the magazine. (The same firm designed the Dorothy I. Height/Benning Neighborhood Library, which opened in 2010.) The renovation of the Petworth Neighborhood

Library, by **Franck & Lohsen**, won a 2011 Chapter Award and was featured in the Winter 2011 issue. The Spring 2011 issue included an article about several projects that were not yet complete at the time, including the renovation and addition to the Mt. Pleasant Neighborhood Library by **CORE architecture | design**, which recently re-opened.

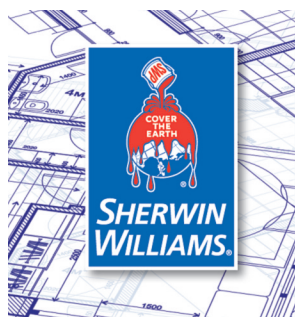


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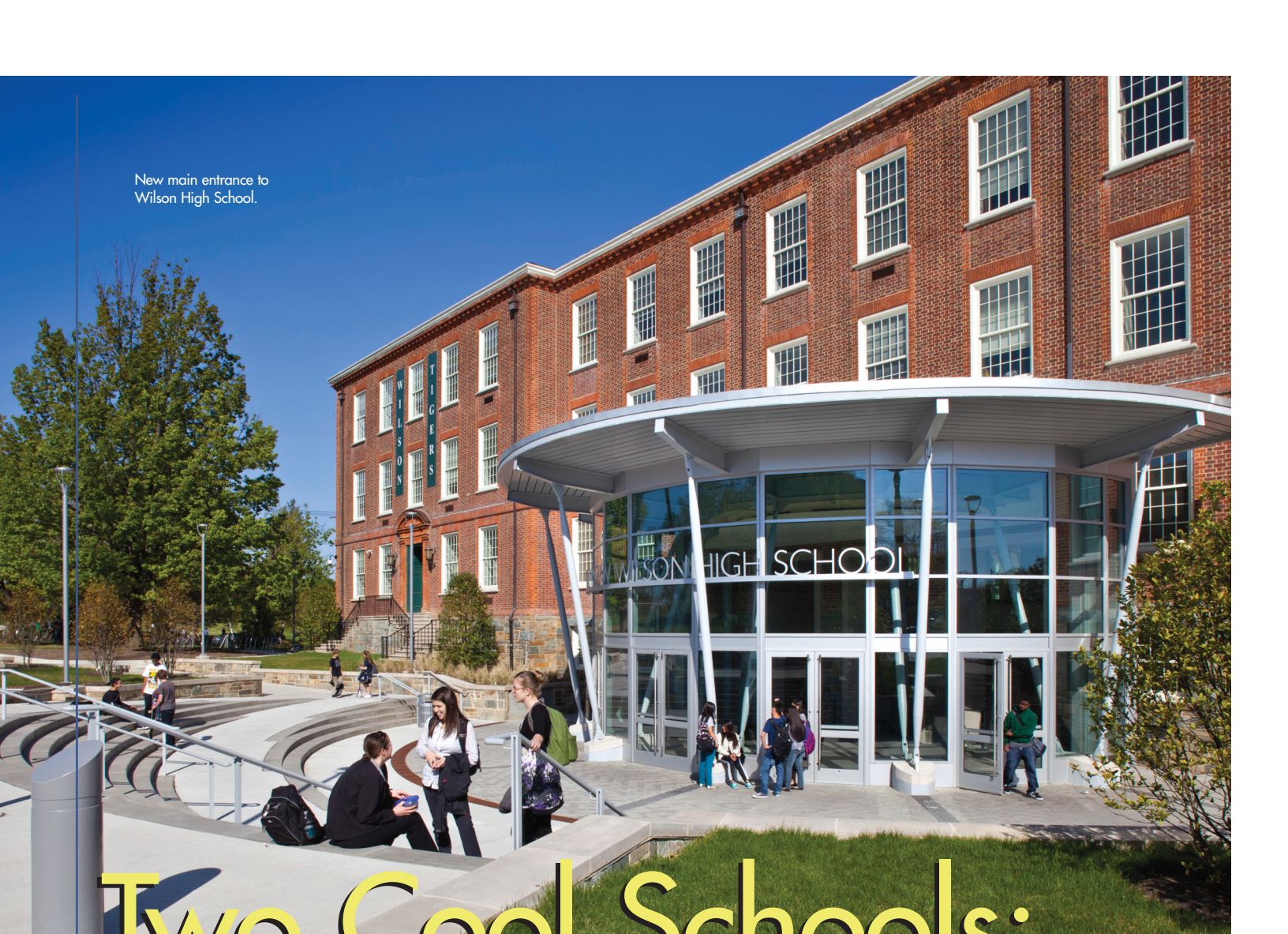
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New main entrance to
Wilson High School.

Two Cool Schools:

Up-to-Date Designs for Public Education

Photo © Robert Creamer,
Photographer

by G. Martin Moeller, Jr., Assoc. AIA

Like the DC Public Library, the DC Public Schools (DCPS) recently embarked on an ambitious plan to renovate or replace outmoded facilities. Two recent projects by **cox graae + spack architects**, both of which were honored in the 2012 AIA | DC Chapter Awards program, demonstrate how one architecture firm, responding to radically different physical and programmatic constraints, can produce designs that are carefully tailored to the needs of their constituents.

Woodrow Wilson High School and H.D. Woodson Senior High School contrast sharply in several ways. Wilson is located in upper Northwest DC, while Woodson stands near the easternmost corner of the District. The neighborhoods surrounding Wilson are overwhelmingly white, and its student body roughly mirrors the overall demographics of the city, while Woodson's student body and adjacent neighborhoods are nearly 100% African American. The Wilson campus is an assemblage of modern and historic elements, while Woodson is a singular, entirely new facility that replaced a dilapidated eight-story concrete tower built in 1973 (the demolition of which drew few tears from those who remembered the fortress-like structure).

Despite these differences, both schools are now exemplars of contemporary educational facility design. They reflect current ideas about optimal learning environments while allowing for future changes. Both are also environmentally responsible, having achieved LEED Gold certification.

Adapting a Depression-Era School for Modern Times

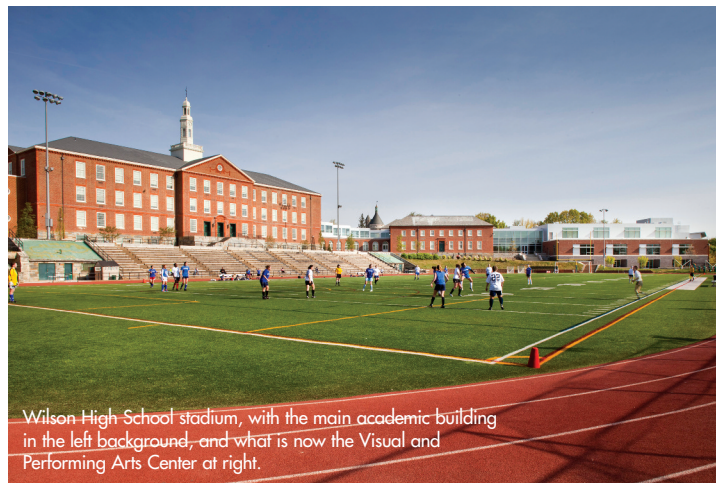
Woodrow Wilson High School is the largest public high school in the District of Columbia, now accommodating more than 1,700 students. Built during the Great Depression, it was designed in the Colonial Revival style still popular in 1930s America. The design is credited to Nathan C. Wyeth, the city's municipal architect from 1934 to 1946, though architects Albert Harris, Frederick V. Murphy, and Edward W. Donn also contributed to the project.

In 2009, DCPS conducted a design competition for the modernization of Wilson, which had fallen into disrepair. DCPS



New atrium of Woodrow Wilson High School at night.

Photo © Robert Creamer, Photographer



Wilson High School stadium, with the main academic building in the left background, and what is now the Visual and Performing Arts Center at right.

Photo © Robert Creamer, Photographer



Atrium of Wilson High School.

Photo © Robert Creamer, Photographer

Project: Woodrow Wilson High School, Washington, DC

Architects: **cox graae + spack architects**

Associate Architects: **Fanning Howey**

Project Managers: **DC PEP, A Joint Venture of Brailsford & Dunlavey and McKissack & McKissack**

Landscape Architects: **Brian J. Stephenson + Co.**

Structural Engineers: **ReStil Designers**

MEP Engineers: **Fanning Howey**

Civil Engineers: **Delon Hampton & Associates, Chartered**

AV/Acoustics/IT Consultants: **Polysonics Corp.**

Food Service Consultants: **Tricon**

Contractor: **GCS-SIGAL, LLC**



Courtyard of the academic building before it was transformed into the new atrium.

awarded the project to cox graae + spack, the only firm that proposed preserving the majority of the existing campus. Later, when the design process was already well under way, the building was designated a DC Historic Landmark, thus validating the architects' preservation-oriented approach.

The original campus consisted of three primary structures linked by curving arcades and partially embracing an open-air stadium. A brutalist-style concrete gymnasium was added at the northeast corner of the site in 1971. A new aquatic center, designed by Hughes Group Architects and completed in 2009, stands at the southwest corner and was not modified in the renovation.

This assemblage of disparate elements posed both practical and aesthetic challenges for cox graae + spack. The narrow, curving arcades, for instance, created choke points for students moving

among the pavilions. To complicate matters, in the 1970s, the original main entrance facing the stadium was closed due to security concerns and its function shifted to a pair of rather modest, widely separated exit doors at the rear of the building. As a result, the school lacked a clear entry point.

"Wayfinding was difficult for many years, and accessibility was a major problem," said firm principal **Christoffer Graae, AIA, LEED AP BD+C**. "One of our big moves was to take the entrance floor, which was almost a full flight up above grade, and move it down to a lower level, which was originally the basement." The architects consolidated the paired entrances into a projecting, glass-enclosed lobby that lends much-needed presence to the façade. The new entry, which is slightly below the original grade level, is approached by ramps to ensure accessibility and surrounded by



Main stairwell, or "vertical main street,"
of H.D. Woodson Senior High School.



Project: Howard D. Woodson Senior High School, Washington, DC

Architects: **cox graae + spack architects**

Associate Architects: **SHW Group**

Project Managers: **DC PEP, A Joint Venture of Brailsford & Dunlavey and McKissack & McKissack**

Landscape Architects: **EDAW/AECOM**

Structural Engineers: **ADTEK Engineering**

MEP Engineers: **Setty and Associates International**

Civil Engineers: **Wiles Mensch Corp.**

AV/Acoustics/IT Consultants: **Polysonics Corp.**

Food Service Consultants: **Nyikos Associates**

Aquatic Consultants: **Water Technology Inc.**

Contractor: **HESS Construction & Engineering Services**

Principal façade of H.D. Woodson Senior High School, with the main entry beneath the canopy.

Photo © Robert Creamer, Photographer

a small, outdoor plaza with curving steps that invite students to gather there.

The architects also made substantial modifications to the peripheral pavilions. The two structures to the northeast were converted into a Visual and Performing Arts Center, anchored by a large auditorium occupying the 1970s gymnasium, which was the only part of the complex to be gutted. The gym, in turn, was moved to the former auditorium building next to the aquatic center, thus consolidating the school's athletic facilities. To improve circulation among the pavilions, the architects cleverly converted old steam tunnels into passageways while adding corridors above the existing arcades.

The most profound aspect of the renovation, however, was the transformation of the existing courtyard at the center of the main academic building—previously a desolate, unroofed space dubbed the “prison yard”—into a skylit atrium where all major circulation routes converge. The glass roof is supported by splayed, tree-like columns, which complement the actual trees and other foliage in the space. Shadows cast by the structure of the skylight were modeled by computer in advance and used as the basis for large graphics printed on acoustical panels lining the perimeter walls. Adjoining spaces, including the cafeteria, open directly into the atrium, helping to make it the vibrant heart of the school.

“The atrium space wasn’t mentioned in the [educational specifications] for the project,” noted Graae, “and we had to push

hard to justify spending a couple of million dollars to build it, but now that place is a mob scene. It is extraordinary seeing how popular it is, especially at lunchtime. There is a ‘there’ there that never existed before.”

Starting Afresh in Northeast DC

In contrast to the Wilson High School campus, the site for the new H.D. Woodson Senior High School was almost a blank slate following the demolition of the original, widely despised concrete tower. Nonetheless, the size of the site posed significant design constraints for cox graae + spack. “This is an urban school,” emphasized firm principal **William Spack, AIA**. “There’s 235,000 square feet of [built space] on 12 acres, which had to include athletic fields, tracks, and outbuildings.”

Recognizing that this would be a relatively large building in a mostly residential neighborhood, the architects gave it an appropriately civic character by marking the main entrance with an imposing, cantilevered canopy supported by four slender columns. The columns are sleek and unadorned, but have a distinct entasis—a subtle, convex curvature in profile—which prevents them from appearing too skinny (and alludes to the use of similar curves in ancient Greek and Roman architecture). Beneath the canopy are two large, glassy bays projecting from the second and third floors, which provide additional shelter from the elements at ground level.

The interior of the four-story building is organized around an airy, open stair. “The ‘main street’ concept has become a cliché in school design,” Spack admitted, “but in this case it is a ‘vertical main street’—a [grand stair] that connects all levels.” Lower wings to the north and south contain athletic and arts-oriented facilities, respectively, in addition to other functions.

The layout of academic spaces is innovative, and was largely driven by the school’s “STEM” curriculum emphasizing Science, Technology, Engineering, and Mathematics. A hallmark of STEM education is interdisciplinary study, so the architects arranged most classrooms and labs in pairs, with acoustical partitions that could be opened when desired—literally “breaking down the walls” between different subject areas. The plan also takes a cue from recent design trends in commercial offices and collegiate facilities, incorporating informal gathering spaces where groups of students may work on collaborative projects.

Another important design determinant was the goal of making the building an active community asset even after school hours, which added a layer of complexity to circulation patterns. The architects succeeded in providing separate public access to the auditorium, natatorium, and other arts and athletic facilities without compromising school security. Even the school’s media center is situated so that it can serve as a de facto branch library for the neighborhood.

Although it serves a highly disadvantaged community—more than 80% of its students qualify for free or reduced-price lunches—H.D. Woodson offers a state-of-the-art academic environment and accessible, popular amenities for nearby residents. According to Spack, “They’ve been wildly happy with it.” 🏫



One of the collaborative study spaces at Woodson Senior High School. Note the low-level lockers in the background, which facilitate casual conversations among students.

Photo © Robert Creamer, Photographer

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Wilson High School



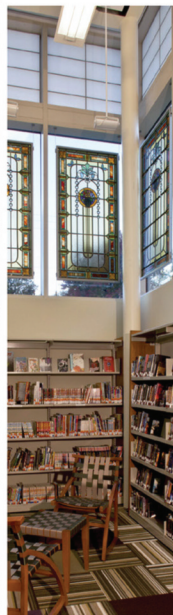
Eastern High School



Georgetown Preparatory



Georgetown Visitation



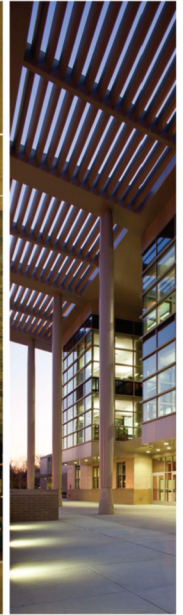
Reed Westover Library



Job Corps Center



The Potomac School



Woodson High School

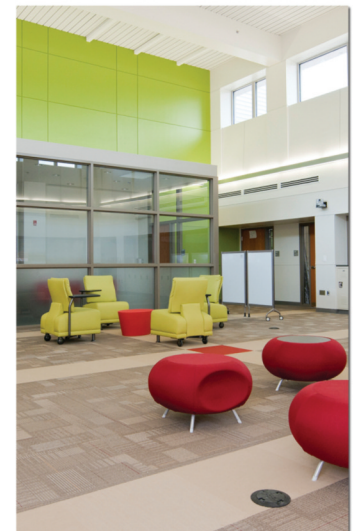
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Silence and Reflection in a Serene Light:

KieranTimberlake Designs a
New Meeting House/Arts Center
for Sidwell Friends School by Ronald O'Rourke



Redesigned plaza in front of the former Kenworthy Gymnasium, which now accommodates a Quaker Meeting House and arts facilities.

At Sidwell Friends School—a Quaker day school with campuses in Washington and Bethesda—all students participate in weekly Quaker meetings, which are the faith's regular religious gatherings. Quaker meetings have no formal leaders, and are unscripted—participants sit quietly in reflection, and rise to speak only when moved. For much of the time at Quaker meetings, there is complete silence.

For more than a decade, the meetings at Sidwell's 15-acre Washington campus, located on Wisconsin Avenue, NW, in Tenleytown, were held at the school's 1950s-era Kenworthy Gymnasium building. The building offered a large meeting space and a central campus location, but the space was architecturally uninspired and noisy from the building's mechanical systems, and 500 folding chairs had to be set up for each meeting. The school's master plan therefore called for replacing this makeshift worship space with a dedicated meeting house.

To fulfill that part of the plan, the school brought back **KieranTimberlake**, the Philadelphia-based architecture firm that designed Sidwell's new Bruce Stewart and Andra Jurist Middle School building—Washington's first LEED Platinum building. (That project was covered in the Fall 2007 issue of *ARCHITECTURE* **DC**.)

Two possible sites for the new meeting house were considered. One—a location at the front of the campus—would symbolize the importance of worship, but might have conflicted with the school administration building's national historic register designation. The alternative was the centrally located Kenworthy site, which would

send a message about the centrality of Quaker meetings to the school's educational approach.

Settling on the second option, KieranTimberlake and their clients turned to the follow-on question of whether to replace the Kenworthy building with an entirely new structure, or instead convert the building into a meeting house through a major renovation. A series of analyses showed that a renovation would be cost-effective, and the option was also viewed as consistent with Quaker tenets of stewardship and simplicity.

The Kenworthy building housed, in addition to the gym itself, separate spaces for dance, art, music and pottery. The building as renovated includes the meeting house in the old gym space, as well as additional spaces for choral music, instrumental music, two- and three-dimensional art, photography, theater technology, and a computer lab. The renovated building also provides an informal space in which students can interact during the day, and serves as a venue for concerts, performances, and non-religious school meetings. The renovation includes a number of new landscaping elements that better integrate the building with surrounding structures and improve movement through the center of the campus.



Southeast corner of the renovated building, showing the black locust cladding.

Meeting space, which is naturally lit through slots of glass in the ceiling and at the edges of the space.



Photo © Michael Moran/OTTO

The heart of the project—the new worship space—was conceived as a zone of silence and light. White horizontal ceiling panels arranged in a pinwheel pattern modulate sound and filter light coming down from a central skylight. White vertical panels on the space's north and south walls similarly control sound and screen light from clerestory windows, bathing the room's raw oak walls in additional diffuse light.

The use of wood is traditional in Quaker meeting houses, and the simple combination of wood and white plaster, with soft natural light from above, creates a serene, elemental worship space. New mechanical and audio-visual systems are well-concealed, preserving the space's aesthetic purity. Thick exterior cladding dampens outside noise, while a careful placement of absorptive and reflective surfaces on the inside allows the unamplified speaking voices of meeting participants to be easily heard by others.

"The most significant moment in design came when we began thinking about the space in concentric layers or rings, from the inside-out and from the outside-in," said **Stephen Kieran, FAIA**, a founding partner at the firm. "A small pocket garden at the entrance between the new portico and the building separates visitors from the busy campus beyond. A wrap-around hall/lobby/porch within provides a place to pause and gather oneself before entering.



Photography studio, with views to the lower lobby and to the athletic field beyond.

Photo © Michael Moran/OTTO

A thick new wall of mechanical and electrical systems coupled with acoustical insulation provide yet a further threshold to the world within, giving the moment of entry the substance of an old door in a thick wall and obscuring the presence of building systems. Upon entering, new acoustical walls and ceiling planes separate the light of the outside world, allowing it to filter mysteriously into the room as the space slowly centers itself within."

Project: Quaker Meeting House, Sidwell Friends School, Washington, DC

Architects: **KieranTimberlake**

Structural Engineers: **CVM**

MEP Engineers: **Bruce E. Brooks & Associates**

Civil Engineers: **VIKA, Inc.**

Landscape Architects: **Studio Bryan Hanes**

Geotechnical Engineers: **GeoConcepts Engineering, Inc.**

Lighting Consultants: **ARUP**

Acoustical Consultants: **K2 Audio**

Specifications Consultants: **Wilson Consulting**

Cost Estimators: **International Consultants, Inc.**

Surveyors: **A. Morton Thomas and Associates**

Owner's Representative: **JFW Project Management**

Contractor: **The Whiting-Turner Contracting Company**

The project is designed to achieve a LEED Platinum rating, like the new middle school building, and includes a number of passive and active design features to reduce the building's energy and water use. Among other things, the building's façades now respond appropriately to their varying orientations to the sun, interior spaces make extensive use of daylighting and operable windows, and the roof features a photovoltaic array that meets more than 40% of the building's electrical needs.

"We love the fact that the same light falling upon the roof is both performative and contemplative, providing both real electricity to power the building and a source of wonder to power the mind and soul," said Kieran.

The building's exterior is sheathed in black locust wood that was harvested in New Jersey. The species is considered invasive in the mid-Atlantic region, and the wood, which makes for durable siding, would otherwise have been chipped or burned. Timber paneling and flooring used in the interior was recycled from long-unused Maryland barns. The use of the old barn wood, Kieran said, is "kind of like wearing a jacket given by an old friend, a constant and comforting reminder of the continuity of life." Concrete waste created by the demolition of parts of the existing building was reused as permeable fill under the entry court.

"The school now has a heart, rather than a gymnasium trying to be a meeting [house] for worship. Any space that can help make children quiet without saying a word to them is good," Kieran said.

"Silence and light were what we needed to guide us," he added. "They stripped away the inconsequential and gave rise to truly sustainable form that has little to do with counting LEED points and everything to do with the Quaker value of simply becoming a good steward of the world and all that lies within." 🌱



Meeting space.

Photo © Michael Moran/OTTO

An advertisement for Cappellini and Contemporaria. The image shows a modern interior design with a white brick wall, a tall metal bookshelf, a small round table with a lamp, and a large black and white patterned ottoman. The Cappellini logo and website are at the top right. The Contemporaria logo and address are at the bottom.

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An advertisement for Illuminations. The image shows a minimalist interior design with a large circular light fixture hanging from the ceiling, a small round table with a lamp, and a large black and white patterned ottoman. The Illuminations logo and website are at the top right. The catellani & smith logo and address are at the bottom.

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A Temple of Science

Welcomes its Public

by Denise Liebowitz

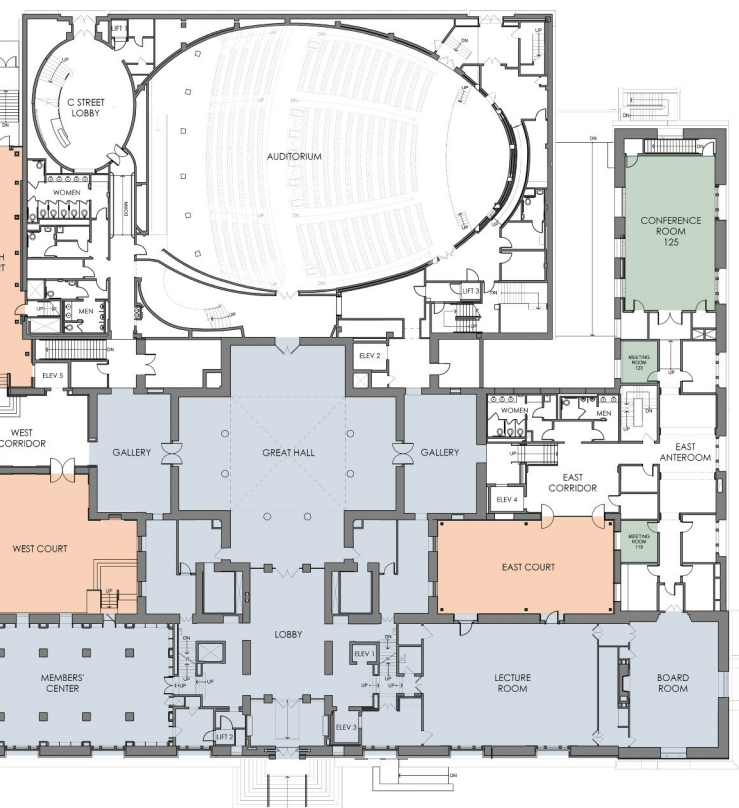
Great Hall of the renovated National Academy of Sciences building, featuring elaborate decorative work by mosaicist and muralist Hildreth Meière.





East court, the roof of which consists of skylights and photovoltaic panels.

Photo © Maxwell MacKenzie



Floor plan, showing the large auditorium dating to 1970 at the top center.

Courtesy of Quinn Evans Architects

The National Academy of Sciences building offers a calm respite in a city filled with the assertive columns, balustrades, and pilasters of Beaux Arts civic architecture. Standing near the west end of Constitution Avenue, the building offers a monumental but restrained neoclassical face to the National Mall and nearby Lincoln Memorial. But this quietly grand historic structure was showing its age and the organization's leadership wanted to bring it into the 21st century by expanding its ground-floor public spaces and replacing aging infrastructure using modern, sustainable technologies.

Designed in 1924 by celebrated architect Bertram Grosvenor Goodhue, the building is the headquarters of the private, non-profit society of distinguished scholars charged with providing advice to the nation on matters related to science and technology. Although Goodhue did not typically work in the classical style, he was highly sensitive to the proximity of the Lincoln Memorial and envisioned the building as a "Temple of Science." The sumptuous interior offered elite Academy members a clubby gathering place complete with library, lecture halls, offices, dining rooms, and members' room. The main feature of the original building is the colorful, domed Great Hall with elaborate, mosaic-like murals by artist Hildreth Meière using the scientific iconography seen throughout the building. Superb bronze work by sculptor Lee Lawrie is displayed on the monumental entry doors depicting leading figures in the history of science, as well as on grilles, lamps, and window spandrels. Goodhue himself referred to the interior style as "Alexandrian," perhaps invoking the ancient library of that learned civilization, although hints of an Art Deco sensibility are also evident throughout the original building.

As the role of the Academy in national life grew, so did its need for space. In 1962 a west wing was added and three years later a similarly scaled east wing was built, both designed by the New York firm of Harrison & Abramovitz. In 1970 the same firm was commissioned for the auditorium that occupies the space between the two new wings. The contemporary, shell-like interior of the 670-seat auditorium with its innovative acoustical technology is a dramatic departure from the rest of the building.

Quinn Evans Architects, a firm specializing in preservation and conservation work as well as sustainable design, was the Academy's choice to oversee the recently completed rehabilitation and expansion of its building. The structure's marble facades had deteriorated through age and weather and needed restoration, and the roof and drainage system required extensive repair. The ground floor, which today functions as a conference center, had run out of public meeting and reception space, and all of the infrastructure systems were antiquated.

Historic Integrity Meets Modern Sustainability

"Nothing much had been done to the building in 30 or 40 years," explained **Larry Barr, AIA**, the project principal at Quinn Evans. "The Academy's interface with the public had grown, and we needed to find more ground-floor space." His team did so by infilling two interior courtyards as well as a small finger of space between two of the later additions and covering them with saw-tooth glass skylights equipped with cutting-edge, building-inte-



Main façade of the National Academy of Sciences building.



Renovated auditorium.

grated photovoltaic panels. Unlike traditional solar roof panels, these integrated photovoltaic systems form part of the building's structural envelope. Steel frameworks that bear directly on the building walls support the skylights, and clerestory panels and window light shelves draw natural light deep into the building interior. "While the photovoltaics don't generate a lot of electricity, it was an important statement the Academy wanted to make, especially since its current president is a climatologist," Barr noted.

Additional efforts were made to ensure the historic integrity of the building while securing its LEED Silver rating. The team restored rather than replaced the original 1924 steel windows but used a low-emissivity glazing to limit heat gain. They retained historic lighting fixtures, but fitted them with LEDs, and threaded high-efficiency HVAC and other systems through the small cavities of the historic structure. And they puzzled out the varying floor levels of the Goodhue building and its later additions in order to make the facility ADA-compliant.

Barr singled out two aspects of the project he feels were highly successful: significantly improved circulation and wayfinding through the ground floor and unrelenting attention to craftsmanship. "Over the years the galleries to the east and west of the Great Hall had been taken over by dining rooms and offices, so the only way to move around was through the Great Hall. And if that was being used for an event, it was awkward. So we cleaned out

the east and west galleries, made the space much more transparent so people could understand where to go."

The level of craftsmanship throughout the Goodhue building with its meticulous sculptural ornament, resplendent murals and art work, and highest-quality materials, inspired the Quinn Evans team. Their attention to detail is evident throughout the renovated building, but nowhere more so than in the refurbished conference rooms. These rooms, repurposed and reconfigured as Barr and his team eliminated underutilized hallways to create more public space, project a fresh, spare aesthetic. Precision millwork, careful lighting, and seamlessly integrated data, electrical, and fire suppression systems are clearly of their time, but melded comfortably into their historic building fabric. "We were very respectful of what was there," explained Barr. "We wanted to do something that was of the 21st century, but to the same high standard."

One of the nicest surprises of the renovated building is how easily accessible it is to the general public. Responding to a recent visitor's request to roam through the ground-floor rooms, a welcoming entry guard said, "Sure, just hit the lights when you go into the auditorium." With changing art exhibitions, a series of free chamber music concerts, and a pleasant cafeteria open to the public, the visitor-friendly private Academy is a reminder of what has been lost as our beautiful government buildings recede ever further behind their security barriers. 🏛️



Photos © Maxwell MacKenzie

Project: National Academy of Sciences Renovation, Washington, DC

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 Architectural Conservationists: **The Gilders' Studio;**
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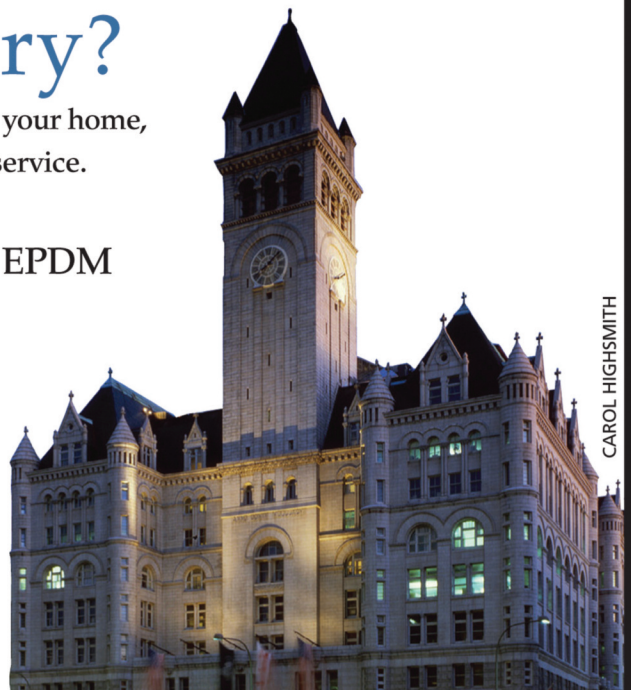
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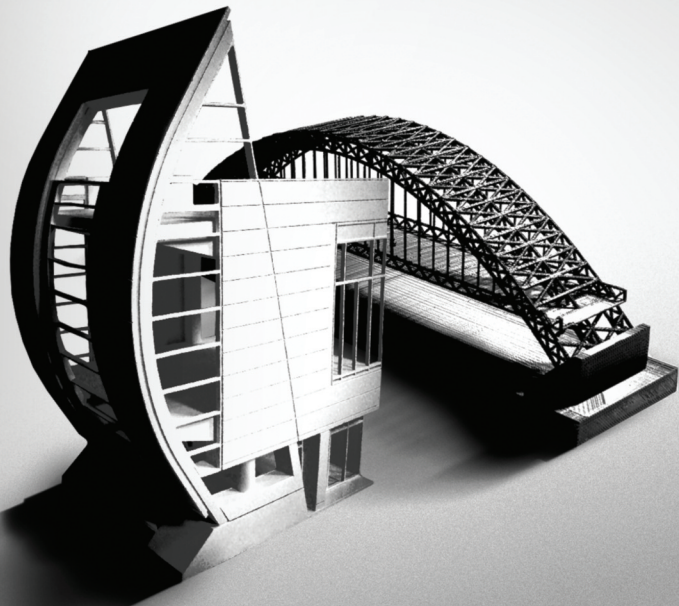
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